Kindly amend the application as follows:

IN THE CLAIMS

Please amend the claims as shown: [1]

20. (Twice Amended) A method of producing linear α-1,4 glucans comprising using a protein having the enzymatic activity of an amylosucrase that is coded for by a DNA molecule comprising a first DNA sequence encoding said protein, wherein said first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

(a) a DNA sequence coding for a protein having SEQ ID NO:2;

(b) the coding region of SEQ ID NO:1;

(c) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number Deutsche Sammlung von Mikroorganismen (DSM) 9196;

(d) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(e) a part of any one of the DNA sequences of (a)–(d) coding for a protein having the enzymatic activity of an amylosucrase; and

(f) a full length complement of the DNA sequence of any one of (a)–(e);

incubating said protein encoded by said first DNA sequence with sucrose under conditions that allow said protein to produce linear α-1,4 glucans; and

isolating the linear α-1,4 glucans.

[1] An "Appendix of Amendments" is attached showing amendments to claims. In the Appendix, the added portions are underscored and the deleted portions are bracketed.

21. (Twice Amended) A method of producing fructose comprising using a protein having the enzymatic activity of an amylosucrase that is coded for by a DNA molecule comprising a first DNA sequence encoding said protein, wherein said first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

D' cont.

(i) a DNA sequence coding for a protein having SEQ ID NO:2;

(ii) the coding region of SEQ ID NO:1;

(iii) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(iv) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(v) a part of any one of the DNA sequences of (i)–(iv) coding for a protein having the enzymatic activity of an amylosucrase; and

(vi) a full length complement of the DNA sequence of any one of (i)–(v);

incubating said protein encoded by said first DNA sequence with sucrose under conditions that allow said protein to produce fructose; and

isolating the fructose.

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33. (Amended) A process for the production of linear α-1,4 glucans, fructose and/or fructose syrup comprising the steps of:

D2

(a) culturing a host cell comprising a protein having the enzymatic activity of an amylosucrase, that is encoded for by a DNA molecule comprising a first DNA sequence encoding said protein, wherein said first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

(i) a DNA sequence coding for a protein having SEQ ID NO:2;

(ii) the coding region of SEQ ID NO:1;

D2 cont

(iii) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(iv) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(v) a part of any one of the DNA sequences of (i)–(iv) coding for a protein having the enzymatic activity of an amylosucrase; and

(vi) a full length complement of the DNA sequence of any one of (i)–(v);

wherein the host cell secretes said protein encoded by said first DNA sequence into a culture medium comprising sucrose under conditions allowing expression and secretion of said protein; and

(b) recovering the produced α-1,4 glucans and/or fructose from the culture medium.

D3

35. (Amended) A process for the production of linear α-1,4 glucans comprising the steps of:

(a) producing an expression cassette comprising the following DNA sequences:

(i) a promoter that is active in plants and ensures formation of an RNA in the respective target tissue or target cells;

(ii) a DNA molecule comprising a first DNA sequence encoding a protein having the enzymatic activity of an amylosucrase, wherein said

first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

(1) a DNA sequence coding for a protein having SEQ ID NO:2;

(2) the coding region of SEQ ID NO:1;

(3) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

D3 cont.

(4) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(5) a part of any one of the DNA sequences of (1)–(4) coding for a protein having the enzymatic activity of an amylosucrase; and

(6) a full length complement of the DNA sequence of any one of (1)–(5);

wherein said DNA molecule is fused to the promoter in sense orientation; and

(iii) a signal sequence functional in plants for transcription termination and polyadenylation of an RNA molecule fused to said DNA molecule;

(b) transferring the expression cassette into a plant cell;

(c) regenerating a transgenic plant from the transformed plant cell; and

(d) isolating the linear α-1,4 glucans synthesized in the plant from the plant.

D4

37. (Amended) The process according to claim 35, wherein the DNA molecule of part (a)(ii) does not contain a signal sequence effecting secretion to the apoplast.

D4 cont

38. (Amended) The process according to claim 35, wherein the promoter of part (a)(i) ensures the expression of amylosucrase in sucrose storage organs of the plant.

D5

40. (Amended) A process for the production of linear α-1,4 glucans, fructose and/or fructose syrup in vitro comprising the steps of:

(a) contacting a solution comprising sucrose with a protein having the enzymatic activity of an amylosucrase encoded for by a DNA molecule comprising a first DNA sequence encoding said protein, wherein said first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

(i) a DNA sequence coding for a protein having SEQ ID NO:2;

(ii) the coding region of SEQ ID NO:1;

(iii) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(iv) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(v) a part of any one of the DNA sequences of (i)–(iv) coding for a protein having the enzymatic activity of an amylosucrase; and

(vi) a full length complement of the DNA sequence of any one of (i)–(v);

under conditions allowing the conversion of sucrose to α-1,4 glucans and fructose by said protein encoded by the first DNA sequence; and

D5 cont

(b) recovering the produced α-1,4 glucans and/or fructose from the solution.

Please add claim 47:

47. (Added) A process for the production of linear α-1,4 glucans, fructose and/or fructose syrup comprising the steps of:

D6

(a) culturing a microorganism comprising a protein having the enzymatic activity of an amylosucrase encoded for by a DNA molecule comprising a first DNA sequence encoding said protein, wherein said first DNA sequence is more than 60% homologous to a second DNA sequence selected from the group consisting of:

(i) a DNA sequence coding for a protein having SEQ ID NO:2;

(ii) the coding region of SEQ ID NO:1;

(iii) a DNA sequence encoding a protein having amylosucrase activity in the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(iv) a DNA sequence coding for a protein encoded by the DNA insert of plasmid pNB2 from Neisseria bacteria having deposit number DSM 9196;

(v) a part of any one of the DNA sequences of (i)–(iv) coding for a protein having the enzymatic activity of an amylosucrase; and

(vi) a full length complement of the DNA sequence of any one of (i)–(v),

wherein the microorganism secretes said protein encoded by said first DNA sequence into a culture medium comprising sucrose under conditions allowing expression and secretion of said protein; and

(b) recovering the produced α-1,4 glucans and/or fructose from the culture medium.

THE OFFICE ACTION

The Withdrawal of Claims 20–21

The Examiner has withdrawn claims 20–21 from consideration, alleging that the body of the claim is drawn to non-elected subject matter even though the preamble is drawn to elected subject matter. Applicants traverse.

The Examiner improperly withdrew claims 20–21 from examination. Claims 20 and 21 were properly included in Group IV in the July 2, 2002 Office Action and were properly elected with the other claims of Group IV in applicants' August 2, 2002 response. Applicants amended claims 20 and 21 in that response to rewrite the claims in independent form, but did not change the substance or scope of the claims. Thus, these claims were not amended to be drawn to a different invention after the July 2, 2002 Office Action.

If the Examiner believed that the original restriction requirement was incorrect and that claims 20 and 21 did not belong in Group IV, applicants respectfully submit that the Examiner should have issued another restriction requirement. See 37 C.F.R. § 1.142(a) and MPEP § 811.02. For these reasons, applicants respectfully request that the Examiner examine claims 20 and 21 or issue another restriction requirement. Further, applicants request that the Examiner make the subsequent Office Action, if required, non-final, because applicants have not been provided an adequate opportunity to respond to the withdrawal of claims 20 and 21 or to any subsequent rejection of these claims.

In addition, applicants have amended claims 20–21 to recite steps for making α-1,4 glucans and fructose, respectively, in the body of the claims. As amended, claims 20–21 are clearly drawn to elected subject matter. Accordingly, applicants request that claims 20–21 be examined on the merits.